SEASONAL EMERGENCE PATTERNS OF FISHFLIES EAST OF THE ROCKY MOUNTAINS (MEGALOPTERA: CORYDALIDAE)[1]

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ABSTRACT: Emergence patterns of seven species of fishflies are presented after the examination of 2944 adults from 38 states east of the Rocky Mountains. *Chauliodes pectinicornis* and *C. rastricornis* emerge with regional variations from February to November and January to December, respectively. *Nigronia serricornis* emerges from March to November, while *N. fasciatus* emerges from April to July. The emergence period for *Neohermes concolor* extends from April to August. *Neohermes angusticollis* and *N. matheri* emerge from April to June and May to June, respectively.

DESCRIPTORS: Emergence period, Fishfly, Megaloptera, Corydalidae

Many authors, including Tarter et al. (1976a, b), Caldwell (1976), Watkins et al. (1975), Tarter et al. (1975), Peterson (1974), Tarter and Watkins (1974), Neunzig (1966), Flint (1965), Hazard (1960), Parfin (1952), and Davis (1903), have reported taxonomical, distributional, and ecological information on fishflies in eastern North America.

The subfamily Chauliodinae contains three eastern genera of fishflies: *Chauliodes, Neohermes,* and *Nigronia.* Generally, the larvae of the lentic species, *C. pectinicornis* (Linnaeus), and *C. rastricornis* Rambur, are found in logs in marshes, lakes, swamps, oxbows, and ponds. The larvae of *Nigronia serricornis* (Say) are inhabitants of rocky streams with high to intermediate gradient, whereas the larvae of *N. fasciatus* (Walker) are found under rocks in small, woodland brooks. The larvae of *Neohermes concolor* (Davis), *N. angusticollis* (Hagen), and *N. matheri* Flint are unknown.

The primary objective of this investigation was to report the seasonal emergence patterns of fishflies east of the Rocky Mountains.

Emergence Patterns

Seasonal emergence patterns of seven species of fishflies are noted after the examination of 2944 adults from 38 states east of the Rocky Mountains. Due to the lack of environmental information, no attempt was made to assess the role of temperature and photoperiod on the emergence patterns of fishflies.

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Based on the examination of 868 adults from 33 states, emergence of *Chauliodes pectinicornis* occurs between 30 February (Louisiana) and 11 November (Maryland) (Table 1).

The adults of *C. rastricornis* emerge from some region east of the Rocky Mountains throughout the year. The emergence period, based on the examination of 862 adults from 36 states, extends from 10 January (Florida) to 28 December (Florida) (Table 2).

The emergence period of *Nigronia fasciatus*, based on a limited sample of 194 adults from 18 states, ranges from 15 April (Florida) to 7 July (Pennsylvania) (Table 3). Tarter et al. (1975) reported that *N. fasciatus* from Cabell County, West Virginia, emerged 16 May to 25 May: peak emergence occurred on 20 May.

Based on the examination of 740 adults from 29 states, the emergence period of *N. serricornis* extends from 25 March (Pennsylvania) to 25 November (New York) (Table 4).

The emergence period of *Neohermes concolor*, following the examination of 239 adults from 21 states, ranges from 21 April (Pennsylvania) to 19 August (New York) (Table 5). In Kentucky (Boyd County), 13 collections of adults showed that peak emergence occurred on 3 July (emergence period, 12 June-16 July) (Tarter et al., 1976a). Flint (1965) reported that adults were collected from Massachusetts, Virginia, Missouri, and the District of Columbia in July, May-July, June, and June, respectively.

Neohermes angusticollis has been reported from Georgia and South Carolina (Flint, 1965 and Tarter et al., 1976b). The emergence periods extend from 4 June-19June (13 adults) and 14 May-27 June (10 adults), Georgia and South Carolina, respectively.

Neohermes matheri is known only from Mississippi (Flint, 1965). Emergence, based on 18 adults, occurs from 24 May to 20 June.

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Table 1. Seasonal emergence of *Chauliodes pectinicornis* east of the Rocky Mountains. Number of adults are enclosed in parentheses.

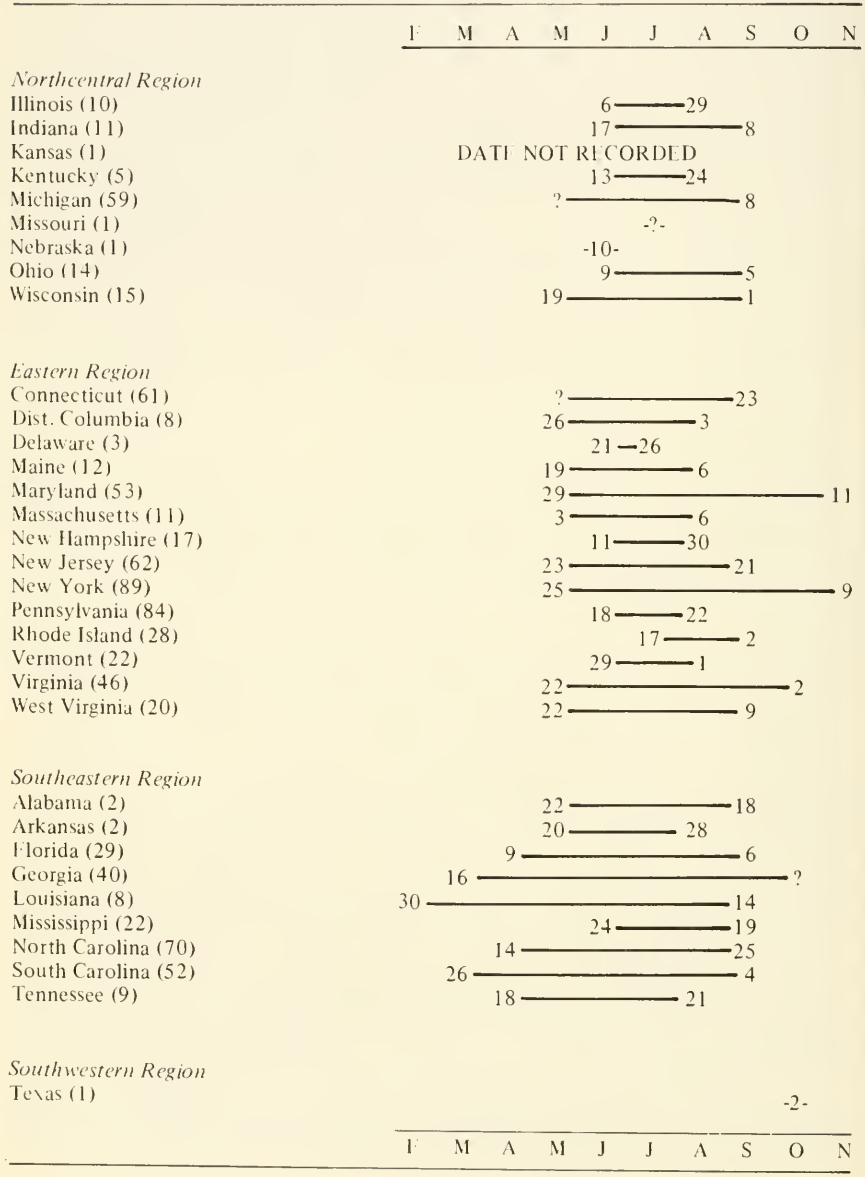

Table 2. Seasonal emergence of *Chauliodes rastricornis* east of the Rocky Mountains. Number of adults are enclosed in parentheses.

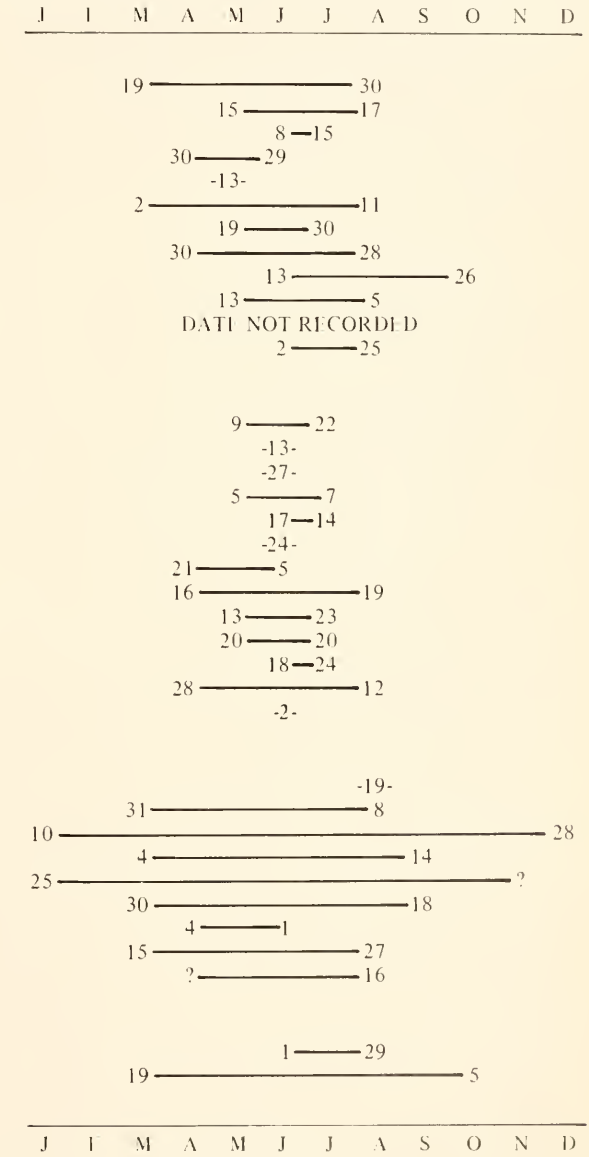

Table 3. Seasonal emergence of *Nigronia fasciatus* east of the Rocky Mountains. Number of adults are enclosed in parentheses.

	April	May	June	July
Northcentral Region				
Illinois (14)		16 ———	?	
Indiana (5)		10 ———	8	
Kentucky (1)		-31-		
Missouri (1)			-22-	
Ohio (31)		21 ———	11	
Eastern Region				
Delaware (1)		-31-		
Maryland (5)		-29-		
New Hampshire (1)			-21-	
New Jersey (1)			-14-	
New York (1)			-25-	
Pennsylvania (33)			4 ———	7
Virginia (5)		20 ——— 30		
West Virginia (31)		16 ———	10	
Southeastern Region				
Florida (1)	-15-			
Georgia (22)	20 ———		22	
North Carolina (8)		14 ———	22	
South Carolina (26)	18 ———			2
Tennessee (7)		21 ———	19	
	April	May	June	July

Table 4. Seasonal emergence of *Nigronia serricornis* east of the Rocky Mountains. Number of adults are enclosed in parentheses.

	M	A	M	J	J	A	S	O	N
Northcentral Region									
Illinois (3)				2—13					
Indiana (28)			13—21						
Kansas (1)					-18-				
Kentucky (8)			11—12						
Michigan (68)		18—				—24			
Minnesota (16)				7—		—31			
Missouri (21)			28—			—6			
Ohio (86)			1—			—26			
Wisconsin (42)				7—			—9		
Eastern Region									
Connecticut (75)			21—					—1	
Delaware (1)			DATE NOT RECORDED						
Dist. Columbia (7)			27—	—1					
Maine (13)				13—28					
Maryland (23)			15—			—11			
Massachusetts (8)				5—15					
New Hampshire (21)				5—		—12			
New Jersey (9)				6—30					
New York (90)		30—							—25
Pennsylvania (74)	25—					—5			
Rhode Island (1)				-5-					
Vermont (5)				7—	—1				
Virginia (52)			14—		—8				
West Virginia (21)			11—		—4				
Southeastern Region									
Arkansas (4)				5—			—15		
Florida (7)		-2-							
Georgia (16)		26—		—30					
Louisiana (3)		22—	—6						
North Carolina (9)			1—	—8					
South Carolina (8)		17—				—19			
Tennessee (20)		4—			—14				
	M	A	M	J	J	A	S	O	N

Table 5. Seasonal emergence of *Neohermes concolor* east of the Rocky Mountains. Number of adults are enclosed in parentheses.

	Apr	May	Jun	Jul	Aug
Northcentral Region					
Illinois (4)			20 —	— 8	
Indiana (23)			1 —	— 24	
Kentucky (72)		25 —	—	— 31	
Missouri (4)				2 — 28	
Ohio (25)		1 —	—	— 18	
Eastern Region					
Delaware (2)				? — ?	
Maryland (4)			18 —	— 17	
Massachusetts (1)			DATE NOT RECORDED		
New Jersey (2)				1 — 29	
New York (20)			30 —	—	— 19
Pennsylvania (31)	21 —	—	—	— 29	
Vermont (2)				? — ?	
Virginia (9)			2 —	—	— 10
West Virginia (8)			8 —	— 3	
Dist. Columbia (1)				-1-	
Southeastern Region					
Arkansas (2)			8 —	— 13	
Georgia (1)			-10-		
Mississippi (8)			13 —	— 16	
North Carolina (11)		26 —	— 18		
Tennessee (5)		18 —	— 24		
Southwestern Region					
Oklahoma (1)			-12-		
	Apr	May	Jun	Jul	Aug